

*A*  
*cont.*

*B1*

to maximize radiation absorbance by whole, undiluted blood;

irradiating a sample of whole, undiluted blood with [said plurality of] at least three of said radiation frequencies, through a depth of said sample chosen to minimize radiation scattering by whole, undiluted blood;

detecting intensities of said [plurality of] radiation frequencies, after passing through said depth of said sample, at a distance from said sample, and over a detecting area, both chosen to minimize the effect of radiation scattering by whole undiluted blood; and

calculating concentrations of each of [a plurality of] at least three said constituent components of said sample of whole, undiluted blood, based upon detected intensities of said [plurality of] radiation frequencies, and upon predetermined molar extinction coefficients for each of said [plurality of] constituent components at each of said [plurality of] radiation frequencies.

Claim 11, line 2, after "said" delete --plurality of--.

*2*  
*A*

12. (Amended) A method as recited in claim 11, wherein said step of calculating comprises calculating concentrations of each of at least three said [plurality of] constituent components using the Beer-Lambert Law of absorption spectroscopy.

Claim 13, line 17, please change the word "one" to  
--three--.

14. (Amended) In an apparatus for calculating concentrations of hemoglobin species in whole blood, an optical device comprising:  
a controllable source of monochromatic light;  
a cuvette for holding a sample of whole, undiluted blood, said cuvette providing an optical absorbance path through said sample of whole, undiluted blood to minimize the effect of light scattering by said sample; [and]  
a light detector positioned to receive and detect forward-scattered light from said source of light passing through said optical absorbance path, said light detector being positioned a distance from said cuvette [and] opposite a side of said cuvette which receives said light, said detector having a light detecting area, both chosen to minimize the effect of light scattering by said sample[.]; and  
a controlling and calculating unit connected to said light source and to said light detector, for controlling said light source and for calculating a concentration of at least three hemoglobin species as a function of forward-scattered light received on said light detector.